

## 2.1 General Information

### 2.1.1 General

This Project will replace approximately 29 existing fish barrier crossings along SR3, SR104, SR303, SR307, and SR308 with fish passable structures in compliance with the Injunction regarding fish passage underneath WSDOT highways. Attachment 1A (Culvert Locations and Site ID Map) of Appendix 1 sets forth a list of the Culverts.

#### 2.1.1.1 Units of Measurement

The Project shall be designed, constructed, and documented in English units of measure.

#### 2.1.1.2 Meetings and Coordination

##### 2.1.1.2.1 All Meetings

The Design-Builder shall develop all meeting agendas and provide all meeting facilities. Agendas shall be sent to the invitees at least 24 hours prior to meetings.

The Design-Builder shall record minutes of each meeting and distribute copies to all attendees within 5 Calendar Days of the meeting for Review and Comment. WSDOT will return comments to the Design-Builder within 5 Calendar Days of receipt of minutes and the Design-Builder shall finalize minutes within 5 Calendar Days of receiving WSDOT comments.

##### 2.1.1.2.2 Task Force Meetings

The Design-Builder is encouraged to maintain close communication with WSDOT throughout the design and construction of the Project. It is anticipated that this close communication will expedite Project reviews, facilitate the incorporation of innovative Project solutions, and facilitate Final Acceptance of the Project.

Task force meetings are required for specific disciplines as noted in these Technical Requirements. Should the Design-Builder choose to hold task force meetings for other disciplines, WSDOT will be available on a weekly basis to attend them.

### 2.1.2 Subcontracts

#### 2.1.2.1 General

The Design-Builder shall incorporate the provisions specified in Attachment 5E of the PDB Contract into each Subcontract.

**2.1.2.2 Communication**

The Design-Builder shall require all Subcontractors, suppliers, and other individuals or entities performing or furnishing any of the Work to formally communicate with WSDOT through the Design-Builder only.

**2.1.2.3 Coordination**

The Design-Builder shall accept sole responsibility for scheduling and coordinating the Work of Subcontractors, suppliers, and other individuals or entities performing or furnishing any Subcontract Work.

The Design-Builder shall accept sole responsibility for the environmental performance of all Subcontractors on the Project. The Design-Builder remains the sole responsible party for all environmental compliance and commitments and shall structure their Subcontractor agreements such that compliance by their subcontractors is assured.

**2.1.3 Construction Office**

The responsibility to provide and maintain all office and other building space during the Phase 2 Work Period, including office space for WSDOT, and all facilities, equipment, and vehicles necessary to construct the Project and to meet the requirements of the PDB Contract shall be in accordance with the applicable Culvert Bundle Amendment.

**2.1.3.1 WSDOT Facilities**

The Design-Builder shall provide office space for the WSDOT Project Office. Full Local Area Network coverage shall be provided throughout this space. Each office space shall be at least 100 square feet, wired for one personal computer (unless otherwise specified) on the WSDOT network. The Design-Builder shall provide the following office and storage spaces for WSDOT:

-\*\*\*1\*\*\* full-time, reasonable sound-proof, closed-door office spaces, one of which has a table with a minimum of four chairs.

-\*\*\*2\*\*\* full-time office spaces.

-Access to conference rooms.

-\*\*\*3\*\*\* parking spaces.

The Design-Builder shall provide security measures for each location. One or more of the following security measures shall be provided for WSDOT construction vehicles, the WSDOT materials testing trailer and storage container:

- Motion-detected security lighting covering the entire area.

- Fencing, including a locking gate and razor wire along the top of the fence.

- Nighttime security patrols-

Other security measures(s) as approved by the WSDOT Engineer.

1 If there is an incident of theft, vandalism, or loss, the Design-Builder shall provide  
2 additional security measures to prevent further incidents of theft, vandalism, and  
3 loss, unless otherwise approved by the WSDOT Engineer.

4 **2.1.3.1.1 Location**

5 The Design-Builder's Project office for the Project and the office space for  
6 WSDOT shall be located \*\*\*at a location chosen by the Design Builder and close  
7 to the Project site\*\*\*.

8 **2.1.3.1.2 General Requirements**

9 In addition to the requirements described above, the office space for WSDOT that  
10 is provided by the Design-Builder shall include the following:

- 11 - Two desks and two chairs.
- 12 - Copying equipment with scanning and capabilities.
- 13 - At least two exits from each building or trailer.
- 14 - A secure door lock plus a deadbolt lock on each entrance.
- 15 - A restroom.
- 16 - Trash and recycling containers for paper, clean glass containers, metal cans, and  
17 plastic containers.
- 18 - Maintained exterior office space areas, including access to parking areas and  
19 snow removal.
- 20 - Overhead lighting that meets the requirements of the United States Occupational  
21 Safety and Health Administration, and building and electrical codes for office  
22 space, which shall include a minimum circuit capacity of 20 amperes, and at least  
23 two duplex receptacles for each office space.
- 24 - Heating, ventilation, air conditioning, and cooling systems capable of  
25 maintaining temperatures between 65 and 75 degrees Fahrenheit in all spaces,  
26 including the network room, throughout the year.
- 27 - Access requirements that meet the Americans with Disabilities Act.
- 28 - An office that meets all local building code requirements.
- 29 - A single point of contact for coordinating all facility-related items.

30 The Design-Builder shall maintain all office space for WSDOT occupancy for the  
31 same duration as its own office space and as a minimum from the commencement  
32 of construction activities through substantial completion.

33 The Design-Builder shall provide the following items to the WSDOT Engineer  
34 within 21 Calendar Days after the Construction Commencement Date:

- 35 - Building address.

- Name(s) of available data service provider(s).

- A walk-through of the office space.

Except for the Design-Builder's Project office and the office space for WSDOT, the Design-Builder shall remove all facilities and perform any required site restoration Work related to facilities provided by the Design-Builder, prior to Physical Completion.

The Design-Builder shall remove all facilities and perform any required site restoration Work related to the Design-Builder's Project office and the office space for WSDOT within 100 Calendar Days after Physical Completion.

#### **2.1.3.1.3 WSDOT-Owned Property**

WSDOT will allow the Design-Builder to use portions of the WSDOT-owned property in accordance with the WSDOT-Owned Property Terms and Conditions (Appendix 4).

Improvements, if necessary, shall be the responsibility of the Design-Builder.

#### **2.1.3.2 Information Technology**

WSDOT's information technology requirements shall be in accordance with the applicable Culvert Bundle Amendment and these general requirements.

##### **2.1.3.2.1 Personal Computer Workstations**

WSDOT will furnish and install, for its exclusive use, personal computer workstations and network printers in any co-located workspaces during the Phase 2 Work Period. WSDOT will connect these devices, with its own 12-foot patch cords, to wall plates furnished by the Design-Builder. Equipment and infrastructure provided by the Design-Builder shall not interfere with WSDOT's network. Network devices provided by the Design-Builder shall be on a different sub-net than WSDOT's and shall not connect to WSDOT's hub or other devices.

##### **2.1.3.2.2 Network Communications**

The Design-Builder shall ensure the office has access to data services designated for the exclusive use of WSDOT. The Design-Builder shall ensure that this data service is equal to or faster than 50Mbps or what is commercially available in the area. Telco demarcation shall be extended into the Main Distribution Frame computer room of the suite or room of the facility WSDOT occupies. Data service shall be ready to use by WSDOT within 30 Calendar Days after the issuance of a Notice to Proceed (NTP) with Culvert Bundle Work for that specific Culvert Bundle. WSDOT will arrange for installation and will pay for the connection charges to the circuit. Category 6 Ethernet network LAN cabling shall be installed from each WSDOT closed-door office, on-site conference room(s), three printer locations, and office space to the wiring location. The wall plates shall be located to permit the use of 12-foot patch cords provided by WSDOT. In addition to the

12-foot patch cords, WSDOT will provide its own hub, router, and Channel Service Unit/Data Service Unit (CSU/DSU) to connect its computers to the internet. The Design-Builder infrastructure shall not interfere with WSDOT's infrastructure.

The Design-Builder shall provide rack space to accommodate the hub, router, and CSU/DSU. The WSDOT equipment may be in the same network room as the Design-Builder's equipment. The Design-Builder shall submit a wiring and office floor plan to the WSDOT Engineer for Review and Comment within 21 Calendar Days of the construction commencement date with Culvert Bundle Work for Culvert Bundle \*\*\*\$1\$\*\*\*.

#### **2.1.4 Project Documentation**

##### **2.1.4.1 General**

The Design-Builder shall accept sole responsibility for the documentation of all Work activities.

The Design-Builder shall maintain in good order, in a secure and protected place at the applicable Culvert Site, one record copy of all Drawings, Specifications, addenda, written amendments, Change Orders, change directives, field orders, and written interpretations and clarifications required for the Work. The Design-Builder shall annotate the record documents to show changes made during design and construction. The Design-Builder shall make these record documents, together with all approved samples and approved Working Drawings, available to WSDOT for reference.

##### **2.1.4.2 Format**

The Design-Builder shall maintain all files indicated in this Section as either:

- Electronic files or
- Hard copies

##### **2.1.4.3 Communications Distribution**

At a minimum, the Design-Builder shall prepare and circulate to WSDOT and meeting attendees, as either hard copies or electronic files, all correspondence, minutes of meetings, and other documents developed as a result of all communications with the following:

- WSDOT
- Utility Owners
- Communities
- Agencies

- The general public

The Design-Builder shall accept sole responsibility for ensuring that all communications are distributed to the appropriate parties.

#### **2.1.4.4 Electronic Files**

##### ***2.1.4.4.1 Backups***

The Design-Builder shall backup all electronic files that have been revised every Calendar Day, backup all electronic files every week, and store all backup media in a secure off-site area in accordance with this Section. A cloud-based data repository service with recoverable files is also acceptable.

##### ***2.1.4.4.2 Data Backup and Recovery***

The Design-Builder shall develop and implement data security and a backup and recovery plan for Project information maintained by the Design-Builder.

#### **2.1.4.5 Design Documentation**

##### ***2.1.4.5.1 Communication and Submittal Documentation***

Throughout the course of the Project, the Design-Builder shall maintain in the Design-Builder's Project office and make available for WSDOT review, at a minimum, one complete set of the following documents: These files shall be electronic.

- PDB Contract
- Calculations
- Reports
- Studies and investigations
- Preliminary Design Submittal and Final Design Submittal documents
- Design QC documentation
- Released for Construction (RFC) Documents and revised RFC Documents
- Communications
- Minutes of meetings
- Review comments and responses
- Permits and other environmental agreements
- Easement agreements

#### **2.1.4.6 Construction Documentation**

##### ***2.1.4.6.1 Communication and Submittal Documentation***

Throughout the course of the Project the Design-Builder shall maintain in the Design-Builder's Project office and make available for WSDOT review, a complete, orderly set of the documents listed below. These files shall be electronic files:

- Subcontracts
- Change Orders
- Working Drawings
- Pay invoices
- Field directive changes
- Claims
- Calculations
- Reports
- Tests
- RFC
- Notice of Design Changes (NDCs)
- Nonconforming Issues (NCIs)
- Nonconformance Reports (NCRs)

#### **2.1.4.7 Document Control Requirements**

##### ***2.1.4.7.1 General***

Document control is an integral part of WSDOT's proactive project management process for all WSDOT projects. The Design-Builder shall use an electronic Document Control System (DCS) to track and manage all Project documentation. The Design-Builder shall ensure that all incoming and outgoing Project documentation is electronically and physically accounted for and filed. Design and construction submittals are filed electronically and physically prior to implementation.

The Design-Builder shall work with WSDOT to ensure that the WSDOT and Design-Builder systems and processes are compatible. The Design-Builder's DCS shall be subject to WSDOT Review and Comment.

The Design-Builder shall establish and maintain a collaborative website DCS, accessible to both the Design-Builder and to WSDOT from the Project office and remote locations, to exchange, organize, list, store, record, and track correspondence, Drawings, technical reports, Specifications, submittals, calculations, control of materials, Inspector Daily Reports, meeting minutes, administrative, and other Project documents. The Design-Builder shall also establish document routing, filing, control, and retrieval methods that are compatible with WSDOT's DCS. Document control, storage, and retrieval

methods shall include the use of both hard copies and electronic records. The Design-Builder's DCS shall manage all the documents. The Design-Builder's DCS shall be established and operational prior to the first design submittal to WSDOT and no later than 30 Calendar Days after PDB Contract execution.

The Design-Builder shall provide DCS access, training, and system support to all WSDOT employees and WSDOT representatives who require access to the collaborative website DCS, including all reviewers of Project documents and other Project stakeholders as directed by WSDOT without stipulations on legal agreements outside of this PDB Contract. If applicable, the Design-Builder shall provide all licenses for WSDOT and other Project stakeholders' use.

#### **2.1.4.7.2 Personnel Requirements**

The Document Control Manager (DCM) shall prepare the Document Control Work Plan and be responsible for the management of Project documents from NTP for the Phase 1 Services through Culvert Bundle Physical Completion for each Culvert Bundle. The Design-Builder shall provide a DCM with a minimum of 2 years of experience managing collaborative web-based electronic DCS. At least 1 year of this experience shall be experience with the specific collaborative web-based DCS that the Design-Builder will utilize on this Project. The DCM shall have experience in auditing systems and processes to ensure compliance with the PDB Contract.

#### **2.1.4.7.3 File Format**

Graphics shall be submitted in TIF, GIF, JPG, or PDF file formats (compressed image formats only). These formats are intended for photos, conceptual sketches, and other uses.

Data files contained in a database or a spreadsheet shall be in one of the following formats:

- Microsoft Access
- Microsoft SQL
- Microsoft Excel

All links between non-graphical data and graphic elements, relationships between database tables, and report formats shall be maintained. The Design-Builder shall provide the database file in the preferred file format as designated by the WSDOT Engineer.

All documents such as reports, photographs, and manuals that use a variety of file formats shall be submitted as PDFs, in addition to being submitted in the base file format.

#### **2.1.4.7.4 Submittals**



1           **2.1.4.7.4.1      Document Control Work Plan**

2           The Design-Builder shall submit a Document Control Work Plan within 30  
3           Calendar Days of NTP for the Phase 1 Services or prior to the first design  
4           submittal, whichever occurs first. This plan shall include the following:

- 5           • File Structure and numbering - an example *Contract File Index* has been  
6           provided in Appendix 4.
- 7           • Subfolders for files of a similar type shall be created when any folder  
8           exceeds 100 files
- 9           • Naming convention and resubmittal naming convention
- 10          • DCS document deletion procedure
- 11          • Flow charts depicting the routing and processing of documents
- 12          • A plan to ensure the most current RFC Documents, pre-activity plans,  
13          meeting minutes and Technical Specifications are in the hands of the  
14          construction manager, superintendents, foreman, QC personnel, and  
15          QA personnel.
- 16          • Persons involved and their responsibilities
- 17          • The handling and filing of hard-copy documents
- 18          • Incorporation of electronic documents into the DCS
- 19          • Site map illustrating the electronic file structure within the DCS
- 20          • DCS backup and recovery
- 21          • Submittal log in DCS

22          **2.1.4.7.4.2      Format**

23          All documents sent to WSDOT shall contain the following information at the top  
24          or on the first page of the document being sent:

- 25          • WSDOT Project name and PDB Contract number
- 26          • Document type, such as letter, letter of transmittal, deliverable, and  
27          submittal
- 28          • Document number, unique for the type of document

29          If any revisions are made to the original document, the same unique number shall  
30          be used with a revision number added. At a minimum, all submittals shall include  
31          one hard copy and one electronic copy. Unless otherwise specified, the Design-  
32          Builder shall send the PDF of the document. WSDOT may also require the  
33          Design-Builder to send the file in other formats as requested by the WSDOT  
34          Engineer.

35          **2.1.4.7.4.3      Project Completion**

36          Prior to each Culvert Bundle Physical Completion, the Design-Builder shall  
37          deliver to WSDOT a full and complete backup of the DCS. This backup shall

include all documents in electronic format. The Design-Builder shall also deliver a copy of the DCS software in the version that the electronic documents and databases were created in.

The Design-Builder shall provide a final file structure and index for the electronic archived documents. Written instructions and procedures for use of the Design-Builder's software pertaining to the archived documents shall also be provided.

#### **2.1.4.7.4.4 Miscellaneous Submittals**

At the request of the WSDOT Engineer, the Design-Builder shall deliver to the WSDOT Engineer Work-related submittals that do not fit in the previous categories but are prepared in accordance with this Section.

### **2.1.5 Software**

#### **2.1.5.1 General**

The Design-Builder shall acquire, use, and maintain all software for the Project.

**Version** – The Design-Builder shall use the current version of the specified software in effect as of NTP for the Phase 1 Services unless otherwise specified in this Section.

**Updates** – The Design-Builder shall update software programs throughout the Term within 6 months of the release of a software update, or earlier if mutually agreed upon with WSDOT. WSDOT will similarly update its software.

**File Server** – The Design-Builder shall store all data files for the software programs on, or have them accessible through, the Design-Builder's central file server.

##### **2.1.5.1.1 Required Project Software**

In addition to any other software specified in the PDB Contract, the Design-Builder shall use the following software programs:

##### **2.1.5.1.1.1 Roadway**

InRoads (by Bentley) – The same version WSDOT is using at NTP for the Phase 1 Services.

##### **2.1.5.1.1.2 CADD Files**

MicroStation (by Bentley) – The same version WSDOT is using at NTP for the Phase 1 Services.

##### **2.1.5.1.1.3 Word Processing and Spreadsheets**

The Design-Builder shall use the following software:

- Microsoft Word for word processing

- 3           **2.1.5.1.1.4     Scheduling**
- 4           Primavera P6 (Version 16.2)

## End of Section